

SAFETY

VS.

SALES

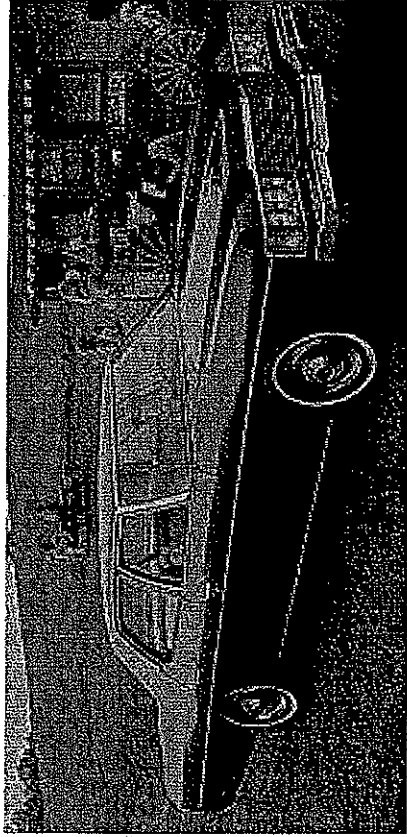
"Some parts, like bumpers, do provide structural strength. Neglecting to build them to the same specifications as original equipment could affect how much damage occurs in a crash or how well occupants are protected. New Institute tests point to the need for these repair parts to be certified as good copies of the originals, so consumers can buy with confidence."

Insurance Institute for Highway Safety¹ (IIHS) Status Report Vol 45, No. 11

¹ IIHS is funded by over 100 Automobile Insurance Companies and 3 Associations including Property Casualty Insurers Association of America

1974 TO 2016

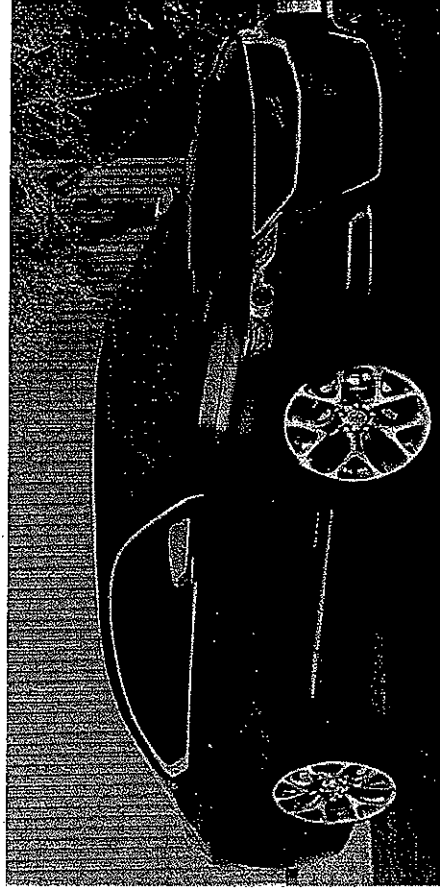
***WHAT A
DIFFERENCE 42
YEARS MAKE***



Public Act 300 of 1974 Motor Vehicle Service Repair Act

Pictured: 1974 CHEVROLET IMPALA

“STANDARDS” - Tested for 5 MPH Bumper Impact – to reduce minor damage loss on VEHICLES



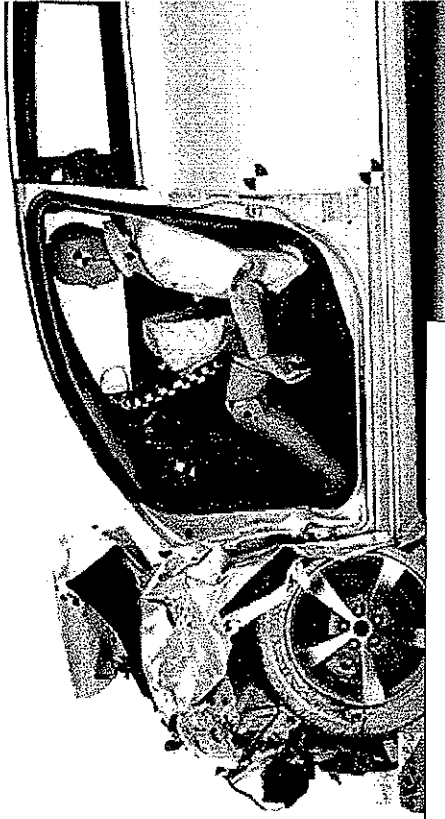
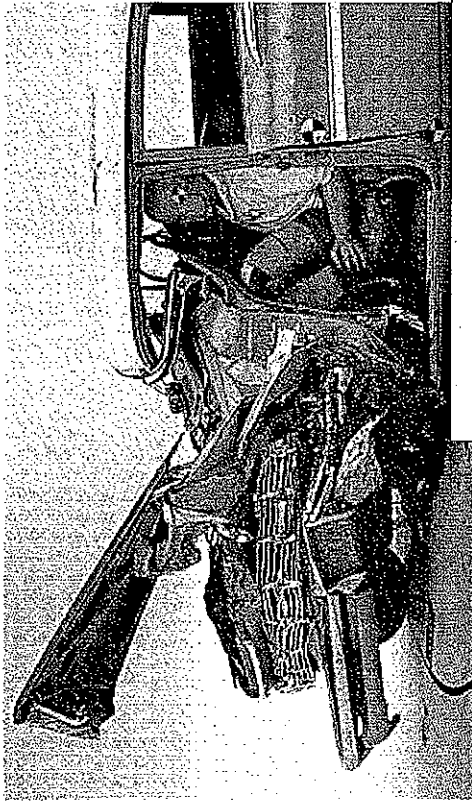
Pictured: 2016 CHEVROLET IMPALA

“STANDARDS” - Tested AND RATED for OCCUPANT PROTECTION 35 MPH Offset Frontal Impact, Side Impact and Roll-Over

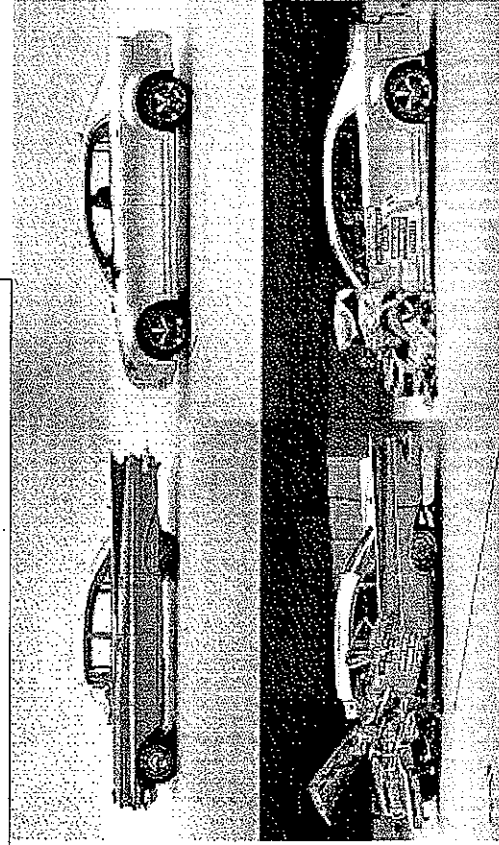
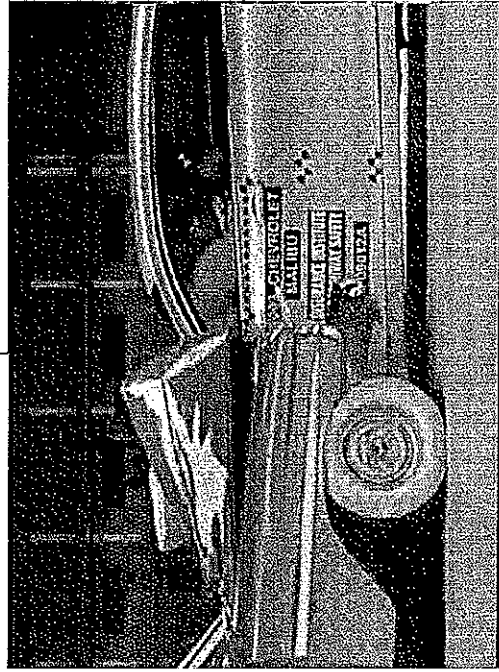
Motor Vehicle Service Repair Act - 42 YEARS LATER, THE LAW NEVER CHANGED

And the engineering worked...

1959 Chevrolet Bel-Air 2009 Chevrolet Malibu



40 MPH FRONTAL OFFSET CRASH TEST



... which is why we have STANDARDS!

Insurance Institute for Highway Safety 50th Anniversary – September 9, 2009¹

"It was night and day, the difference in occupant protection," says Institute president Adrian Lund. "What this test shows is that automakers don't build cars like they used to. They build them better."

The crash test was conducted at an event to celebrate the contributions of auto insurers to highway safety progress over 50 years. Beginning with the Institute's 1959 founding, insurers have maintained the resolve, articulated in the 1950s, to "conduct, sponsor, and encourage programs designed to aid in the conservation and preservation of life and property from the hazards of highway accidents."

Results of 40 mph frontal offset crash test

2009 Malibu 1959 Bel Air

Crashworthiness ratings

GOOD  ACCEPTABLE  MARGINAL  POOR 



Overall

structure/safety cage



head/neck



chest



leg/foot, left



leg/foot, right



restraints/dummy kinematics



A crashworthy design reduces death and injury risk. Structure and restraints (safety belts and airbags) are the main aspects of a vehicle's design that determine its crashworthiness. Good structure means a strong occupant compartment or safety cage; crumple zones to absorb the force of a serious crash; side structure that can manage the force of a striking vehicle or struck object and a strong roof so it doesn't collapse in a rollover.

Crash tests are used to evaluate a vehicle's structural design and restraints. IIHS rates vehicles good, acceptable, marginal or poor based on performance in high-speed front and side crash tests, a roof strength test for rollover protection, plus evaluations of seats/head restraints for protection against neck injuries in rear impacts. The federal government's New Car Assessment Program also evaluates new vehicles for protection in front, side and rollover crashes.

Passenger vehicles are safer than ever. Nearly all new cars, minivans, pickup trucks and SUVs earn good or acceptable ratings in front and side crash tests. Many also perform well when it comes to protecting people in rollovers and rear crashes, but some models still need improvement. IIHS in 2012 introduced a challenging small overlap frontal crash test to encourage automakers to continue to improve protection in frontal crashes.

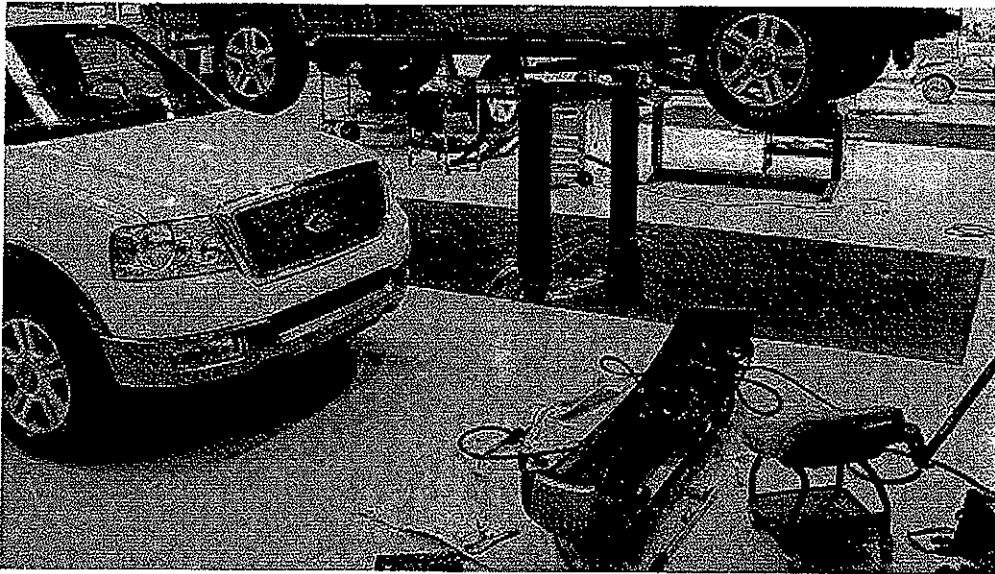
¹ <http://www.iihs.org/iihs/about-us/milestones/50th-anniversary> quotes taken from the article and to see the crash test

**INSURANCE
INSTITUTE
for
HIGHWAY
SAFETY**

CRASH PARTS TESTED

Status Report, Vol. 45, No. 11 | November 3, 2010

Aftermarket bumpers meeting new standard perform well in crashes



Are aftermarket parts as safe as original equipment? That's the question many consumers ask at the collision repair shop. Aftermarket parts are easier on the wallet, but debate has swirled for years over whether these third-party components are comparable to ones straight from automakers. For things like fenders, grilles, and bumper covers, the issues are mainly cosmetic — fit, finish, and wear. These parts don't affect vehicle strength in a collision and are irrelevant to crash safety, as the Institute demonstrated in crash tests as long ago as 1987 (see "Tests show cosmetic parts do not affect safety compliance," Nov. 21, 1987). Some parts, like bumpers, do provide structural strength. Neglecting to build them to the same specifications as original equipment could affect how much damage occurs in a crash or how well occupants are protected. New Institute tests point to the need for these repair parts to be certified as good copies of the originals, so consumers can buy with confidence.

The Certified Automotive Parts Association (CAPA) has been working on the issue and has just released a certification standard, CAPA 501, for aftermarket bumpers. The aim is to ensure that aftermarket copies match the dimensions, material, and construction of automaker-supplied parts. Until now, CAPA has focused on setting quality standards for cosmetic aftermarket parts, lights, and hoods. Prompted by requests from its members, including many insurers, the association is extending its certification program to include structural parts.

The Institute agreed to help demonstrate CAPA's new standard by testing 3 vehicles fitted with aftermarket bumper beams. A beam that conforms to CAPA's requirements performed the same as original equipment, while 2 other aftermarket bumpers had somewhat different outcomes.

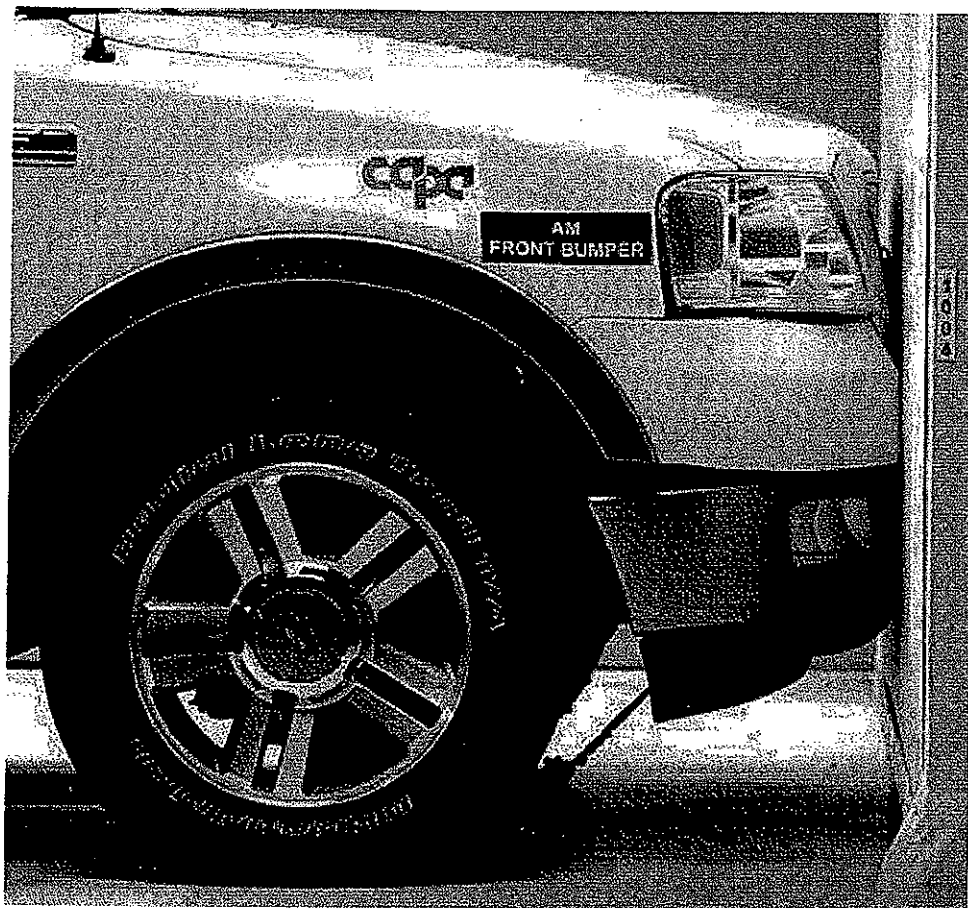
Dodge Ram results

Engineers crash tested a 2008 Dodge Ram 1500 pickup fitted with an aftermarket bumper that meets the material, dimensional, strength, and vehicle fit requirements of CAPA's standard in a 5 mph full frontal test, plus a 40 mph offset frontal test, and then compared the performance with the same model fitted with a Dodge bumper. Results for both of the pickups were nearly identical. The low-speed damage estimate came to \$1,120 for each pickup. Likewise, in the high-speed test both models had similar crashworthiness measures.

"This is what we expected," says Adrian Lund, the Institute's president. "It shows that aftermarket parts can be reverse-engineered without compromising safety. An aftermarket bumper that meets CAPA's new standard should perform as well as the original."

The Institute also crash tested 2 vehicles fitted with front bumper beams that don't meet CAPA's standard. A 2009 Toyota Camry with an aftermarket bumper that CAPA tests showed to be stronger than the original had similar estimated repair costs in the low-speed test as a Camry with a Toyota bumper (\$804 vs. \$792). But the failure modes were quite different. The Toyota bumper buckled at its center, resulting in damage to the bumper cover as the outboard edges of the bumper pivoted forward during the test. The aftermarket bumper didn't buckle, and as a result crushed the ends of the bumper support structure. (EDITORIAL: Beyond the safety aspect, it also proves that non-certified aftermarket parts can cause more damage in another collision which WILL increase the cost of repair as well.)

"The aftermarket bumper bar is thicker and heavier than the original," Lund observes. "That's not a good thing from a safety standpoint. Aftermarket bumpers need to perform exactly the same as original bumpers in a crash. Even small changes in design can skew airbag sensors and alter vehicle damage patterns."



Ford F-150 with aftermarket bumper



F-150 with a Ford-supplied bumper

A low-speed test of a 2005 Ford F-150 with an aftermarket bumper that doesn't meet CAPA's standard had lower estimated repair costs than a test with the stronger dealer replacement bumper (\$1,777 vs. \$1,909). That's because fog lamp recesses in the aftermarket bumper were wider than the original and shielded the lights from damage in the test.

Lower repair costs don't mean the aftermarket bumper is preferable.

"There's a difference between reverse-engineering an aftermarket part to the original specifications and re-engineering one," Lund explains. "You don't want to make it better or worse. You want to make it the same."

Why parts integrity matters

How structural parts are designed and produced can affect crashworthiness because these parts make up the front-end crush zone and safety cage. The crush zone absorbs crash energy, and the safety cage helps protect occupants by limiting intrusion.

Automakers typically use high-strength steel when building the passenger compartment and bumpers. On the other hand, aftermarket suppliers can cut costs by using weaker grade steel or substituting polystyrene foam for the high-impact polypropylene foam automakers use.

In turn, the collision market is a hodgepodge of domestic and overseas suppliers who build structural parts to their own internal guidelines, so there's no guarantee the parts are equivalent to original equipment in terms of quality and safety. This has long concerned some repair shops and consumer advocates, but the issue hasn't gotten much attention outside the industry.

Igniting debate

The tipping point came late last year when Toby Chess, a national director with the Society of Collision Repair Specialists, took a reciprocating saw to a copycat bumper beam and easily cut through the steel during a trade show. Earlier he'd unsuccessfully tried to cut an original equipment beam. The industry took notice, with many insiders sounding the call for tests and certification of aftermarket structural parts.

Ford fanned the debate this summer when it shared results of internal evaluations of aftermarket structural parts. The findings, covered in *Consumer Reports*, raised questions about the performance of bumper beams, isolators, brackets, and radiator supports on the Focus, Mustang, and F-150. Ford's computer-simulated crash tests revealed potential problems with airbag timing in Mustangs and F-150s that were fitted with aftermarket components.

Consumer Reports warned owners against giving repair shops the green light to replace structural parts with aftermarket ones.

Consumers are right to be cautious, Lund says, because it's clear that structural aftermarket parts must be exactly copied to be sure they'll work properly in a crash.

"Aftermarket structural parts shouldn't change how a vehicle performs in a crash test," he says. "CAPA's new bumper standard is a step in the right direction, and we hope the group's work will quickly extend to other vehicle parts."

The use of aftermarket parts is growing, though parts from original-equipment manufacturers still predominate. In dollar terms per appraisal, aftermarket use rose from 11 percent in the 4th quarter of 2007 to 13 percent in this year's 2nd quarter, according to Mitchell Collision Repair Industry data.

Role of cosmetic parts

Often called crash parts, cosmetic parts include fenders, quarter panels, door skins, bumper covers, and the like. The source of cosmetic parts is irrelevant to safety because the parts themselves serve no safety or structural function. They don't affect how a vehicle holds up in a crash. They merely cover a car like a skin.

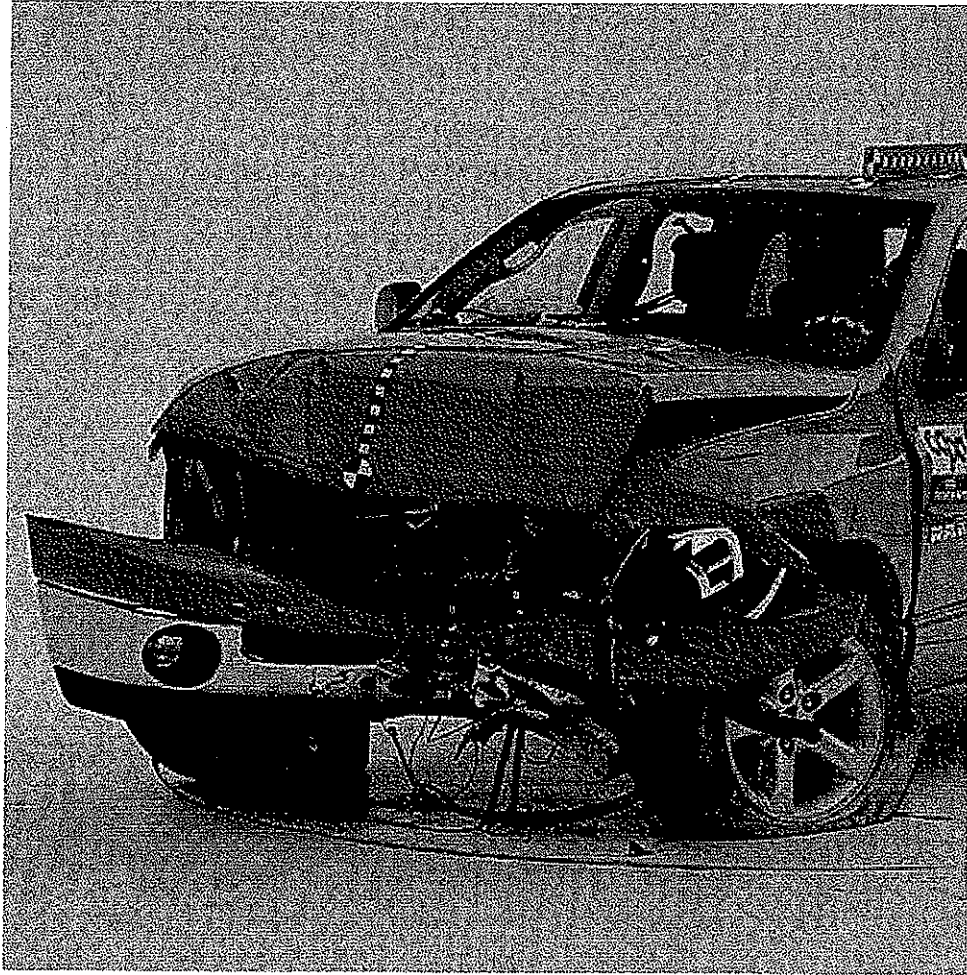
This was proved in a series of crash tests by the Institute and United Kingdom-based Thatcham (see *Status Report* special issue: cosmetic repair parts, Feb. 19, 2000). An Institute test in 2000 involved a 1997 Toyota Camry without its front bumper cover, fenders, front door skins, and other cosmetic parts but with an aftermarket hood. In a test into a deformable barrier at 40 mph, the Camry had the same structural performance and dummy measures as a Camry with original-equipment parts. In 1987, an Institute 30 mph rigid barrier test of a 1987 Ford Escort with an aftermarket hood and without cosmetic parts showed the Escort met all U.S. crash standards. Thatcham had similar results in 1995 in a 30 mph front-into-rigid-barrier test of a 1995 Vauxhall Astra without cosmetic parts.

Bumpers can match original equipment but some miss mark

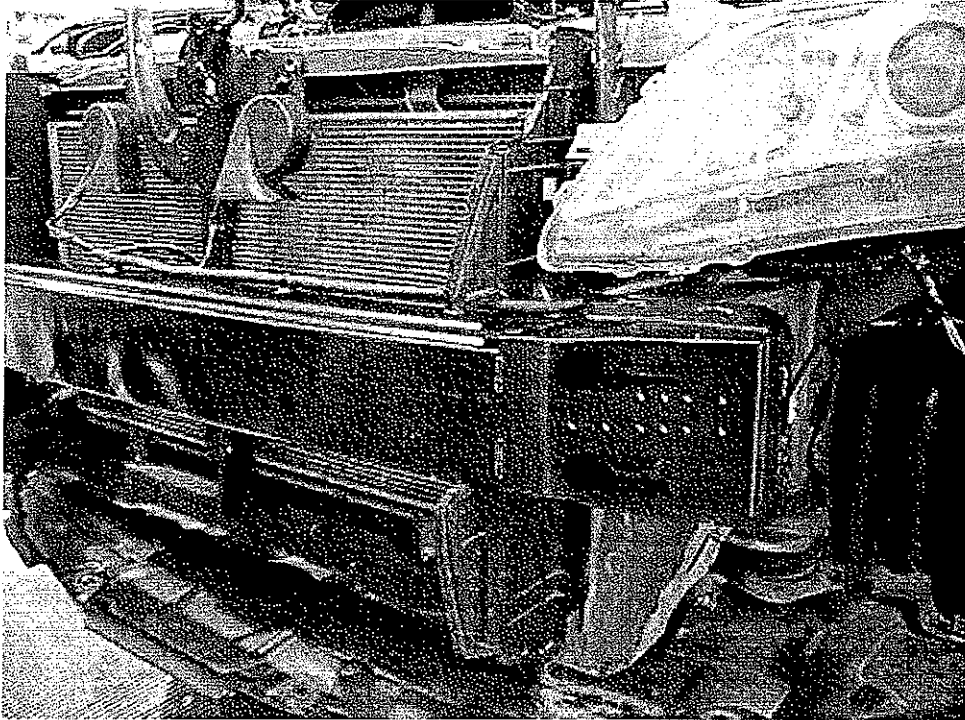
Aftermarket bumpers may look the same out of the box as ones supplied by automakers, but tests show not all perform the same as original equipment. The Institute crash-tested a 2008 Dodge Ram 1500 outfitted with an aftermarket bumper that meets CAPA's requirements in a 40 mph offset frontal test, then compared it with a Ram with a Dodge bumper. Both pickups had similar crashworthiness measures and damage patterns, showing that aftermarket parts can be reverse-engineered without affecting safety. On the other hand, in 5 mph tests comparing an aftermarket bumper that doesn't meet CAPA's requirements on a Toyota Camry with a Toyota-made bumper on another Camry, there were clear differences. The center of the Toyota bumper buckled. The stronger aftermarket bumper didn't buckle, and as a result the bumper frame ends crushed. Small changes in design can skew airbag sensors and alter vehicle damage patterns.



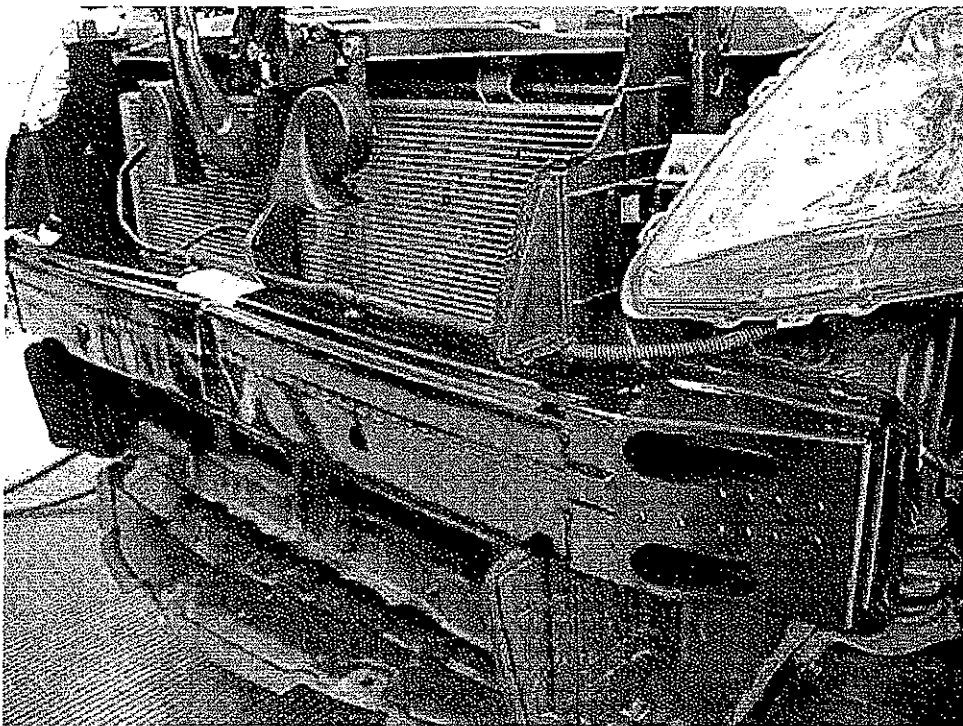
2008 Dodge Ram 1500 with aftermarket bumper



2008 Dodge Ram 1500 with Dodge bumper



2009 Toyota Camry with aftermarket bumper



2009 Toyota Camry with Toyota bumper

LIST OF SUPPORTING INSURANCE CARRIERS & ASSOCIATIONS FOR THE Insurance Institute for Highway Safety

1. Acceptance Insurance
2. ACE Private Risk Services
3. Affirmative Insurance
4. Alfa Alliance Insurance Corporation
5. Alfa Insurance
6. Allstate Insurance Group
7. American Family Mutual Insurance
8. American National
9. Ameriprise Auto & Home
10. Amica Mutual Insurance Company
11. Auto Club Enterprises
12. Auto Club Group
13. Auto-Owners Insurance
14. Aviva Insurance
15. Bankers Insurance Group
16. Bitco Insurance Companies
17. California Casualty Group
18. Capital Insurance Group
19. Censtat Casualty Company
20. Chubb & Son
21. Colorado Farm Bureau Mutual Insurance Company
22. Concord Group Insurance Companies
23. COUNTRY Financial
24. CSAA Insurance Group
25. CSE Insurance Group
26. Direct General Corporation
27. Erie Insurance Group
28. Esurance
29. Farm Bureau Financial Services
30. Farm Bureau Insurance of Michigan
31. Farm Bureau Mutual Insurance Company of Idaho
32. Farmers Insurance Group
33. Farmers Mutual Hail Insurance Company of Iowa
34. Farmers Mutual of Nebraska
35. Florida Farm Bureau Insurance Companies
36. Frankenmuth Insurance
37. Gainsco Insurance
38. GEICO Corporation
39. The General Insurance
40. Georgia Farm Bureau Mutual Insurance Company
41. Goodville Mutual Casualty Company
42. Grange Insurance
43. Hallmark Financial Services
44. Hanover Insurance Group
45. The Hartford
46. Horace Mann Insurance Companies
47. ICW Group
48. Imperial Fire & Casualty Insurance Company
49. Indiana Farmers Mutual Insurance Company

50. Infinity Property & Casualty
51. Kemper Corporation
52. Kentucky Farm Bureau Mutual Insurance Companies
53. Liberty Mutual Insurance Company
54. Louisiana Farm Bureau Mutual Insurance Company
55. Main Street America Group
56. Mercury Insurance Group
57. MetLife Auto & Home
58. MiddleOak
59. Mississippi Farm Bureau Casualty Insurance Company
60. MMG Insurance
61. Munich Reinsurance America, Inc.
62. Mutual of Enumclaw Insurance Company
63. Nationwide
64. New Jersey Manufacturers Insurance Group
65. Nodak Mutual Insurance Company
66. Norfolk & Dedham Group
67. North Carolina Farm Bureau Mutual Insurance Company
68. Northern Neck Insurance Company
69. Ohio Mutual Insurance Group
70. Old American County Mutual Fire Insurance Company
71. Old American Indemnity Company
72. Oregon Mutual Insurance
73. Pekin Insurance
74. PEMCO Insurance
75. Plymouth Rock Assurance
76. Progressive Insurance
77. Pure Insurance
78. The Responsive Auto Insurance Company
79. Rockingham Group
80. Safe Auto Insurance Company
81. Safeco Insurance
82. Samsung Fire & Marine Insurance Company
83. SECURA Insurance
84. Sentry Insurance
85. Shelter Insurance
86. Sompo Japan Insurance Company of America
87. South Carolina Farm Bureau Mutual Insurance Company
88. Southern Farm Bureau Casualty Insurance Company
89. State Auto Insurance Companies
90. State Farm Insurance Companies
91. Tennessee Farmers Mutual Insurance Company
92. Texas Farm Bureau Insurance Companies
93. The Travelers Companies
94. United Educators
95. USAA
96. Utica National Insurance Group
97. Virginia Farm Bureau Mutual Insurance
98. West Bend Mutual Insurance Company

99. Western National Insurance Group
100. Westfield Insurance
101. XL Group plc

Funding associations

- American Insurance Association
National Association of Mutual Insurance Companies
Property Casualty Insurers Association of America

O.E.M. PART

VS.

C.A.P.A. CERTIFIED
PART

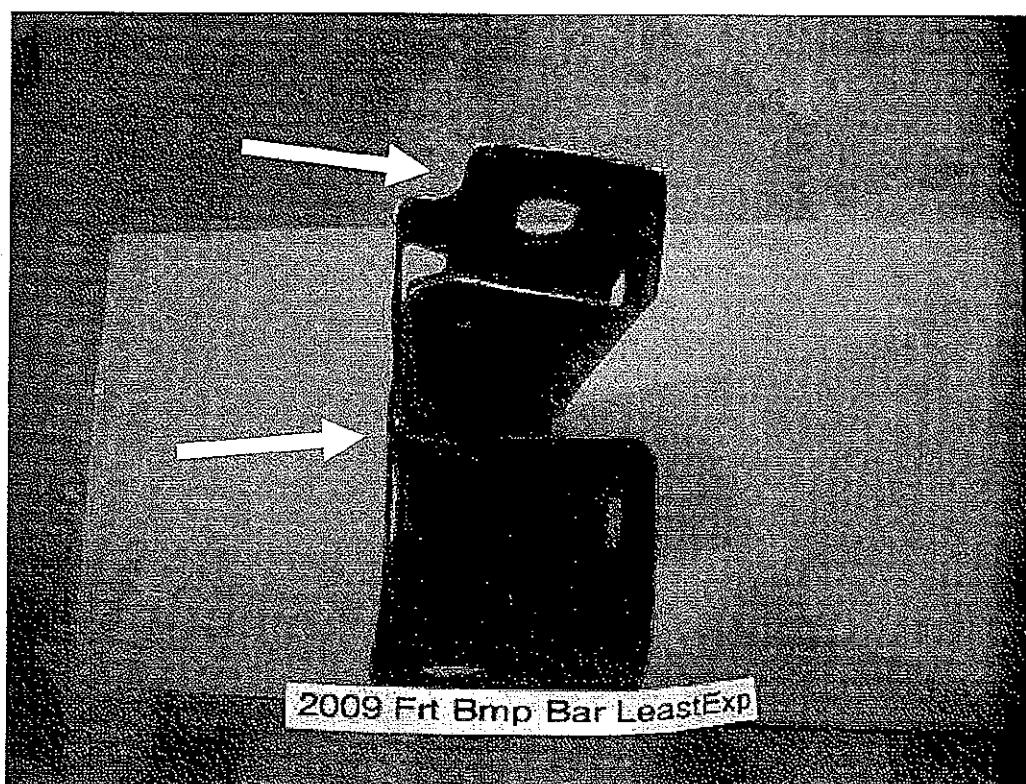
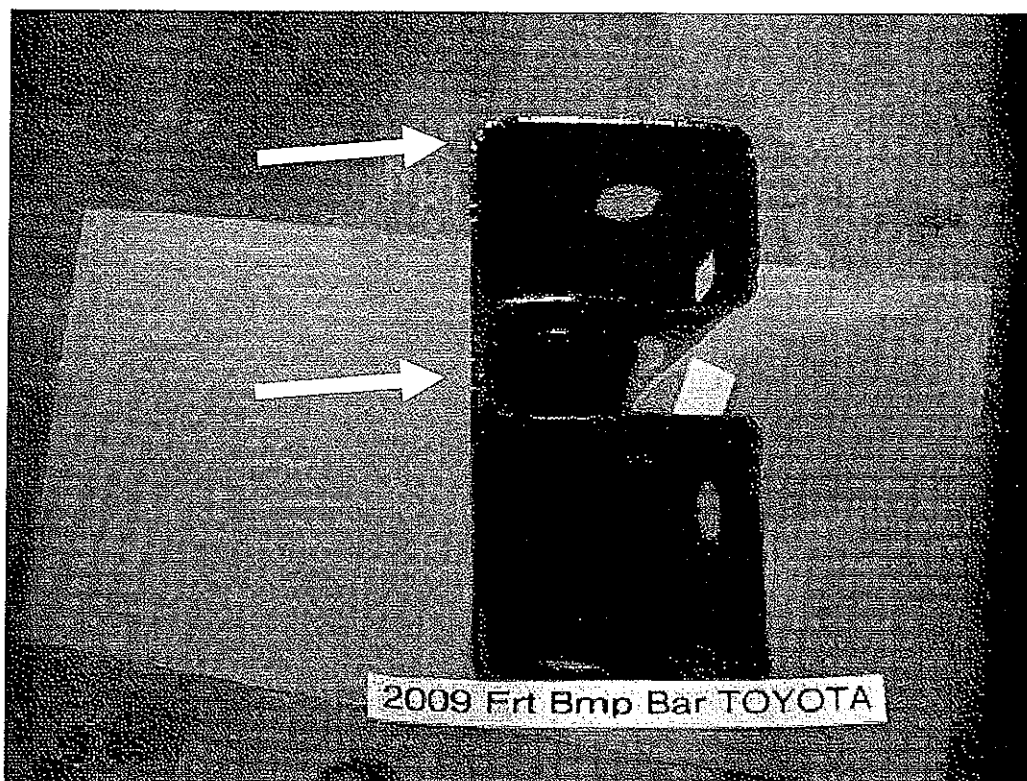
VS.

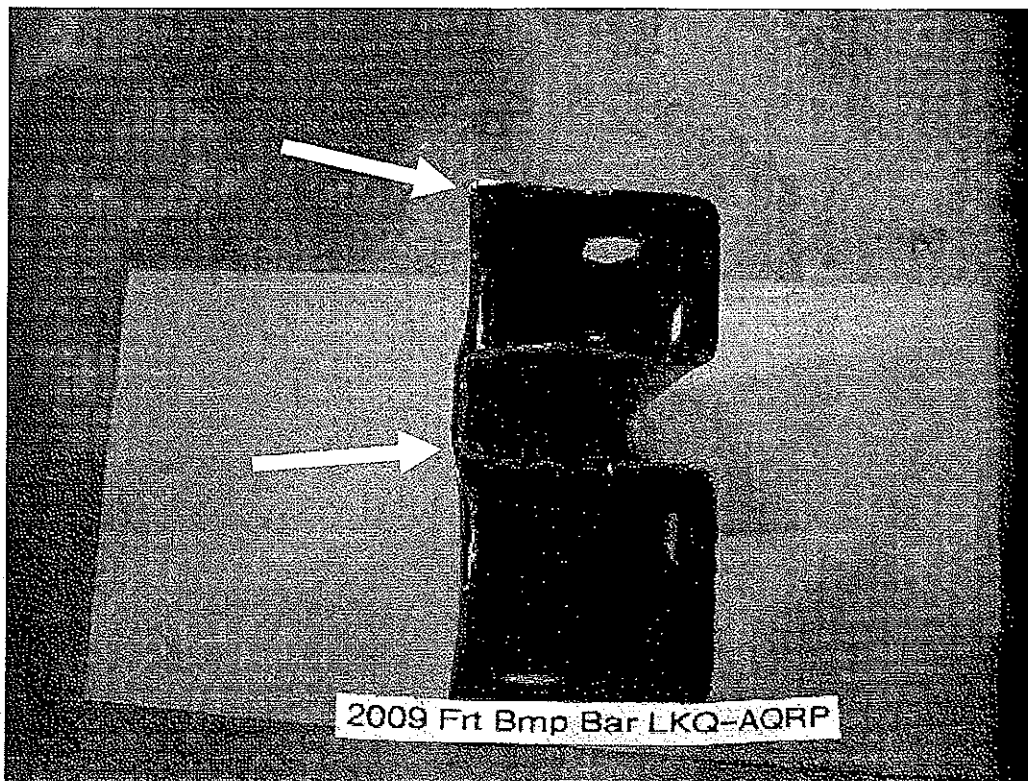
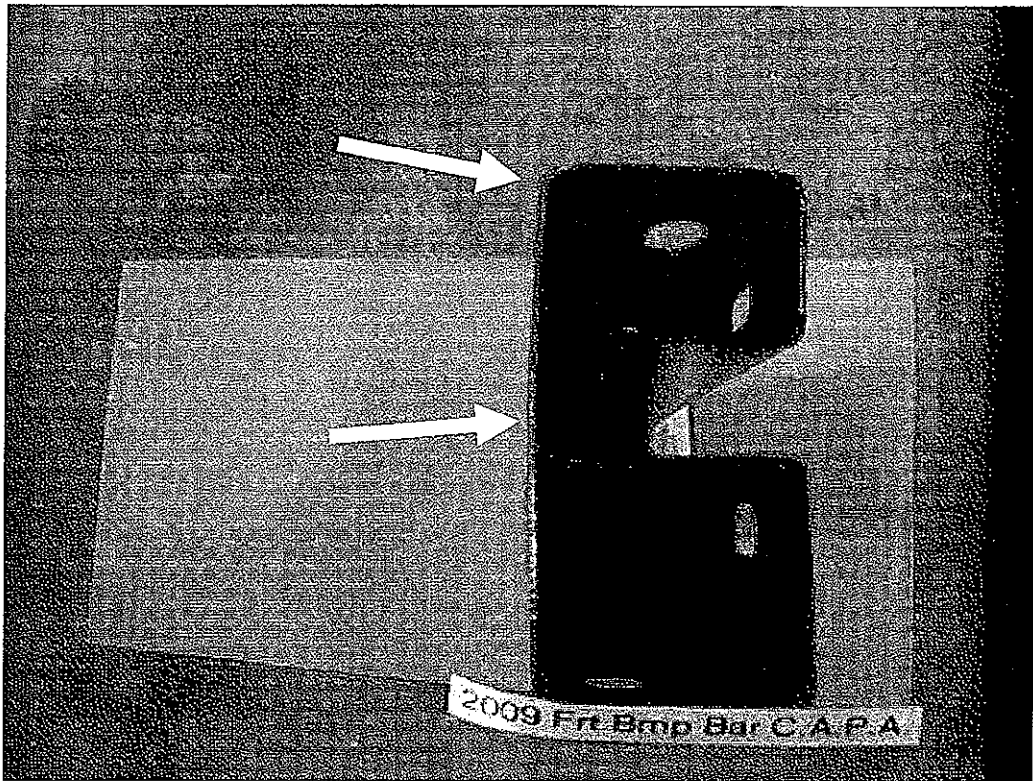
LKQ A.Q.R.P. PART

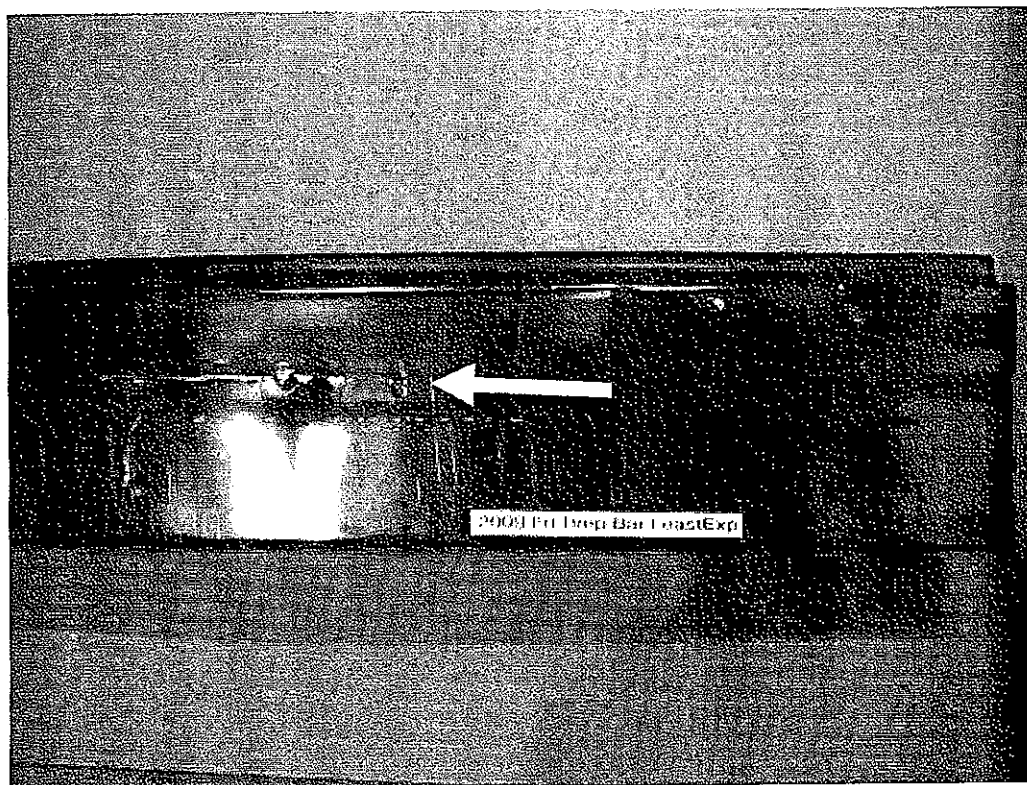
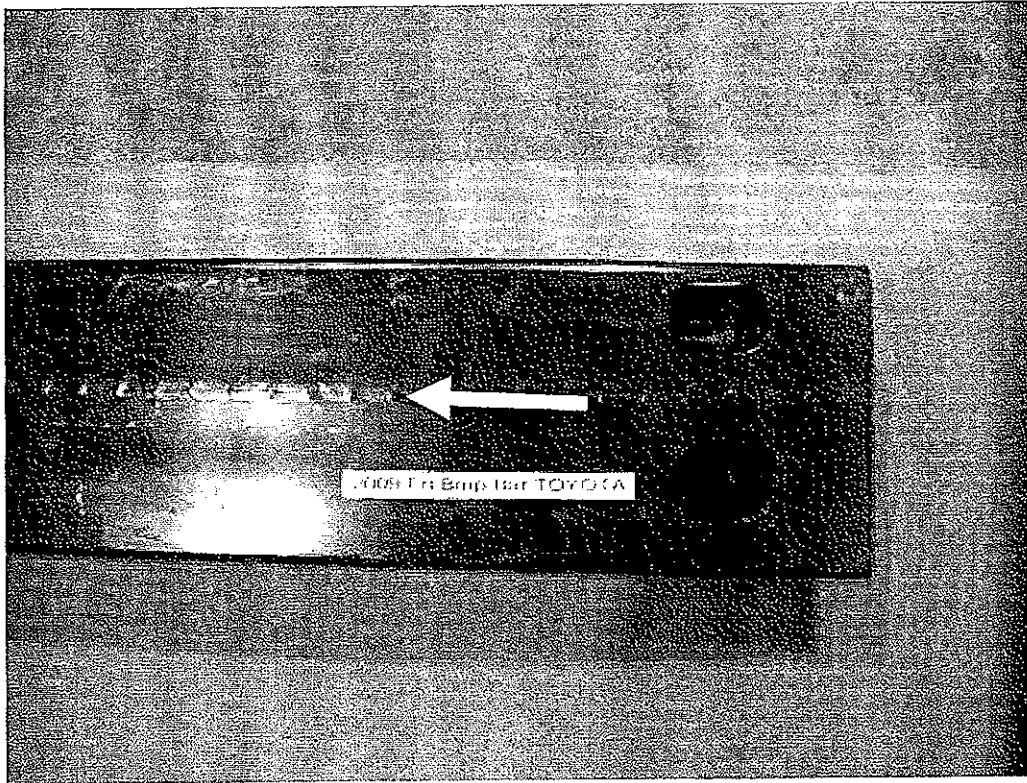
VS.

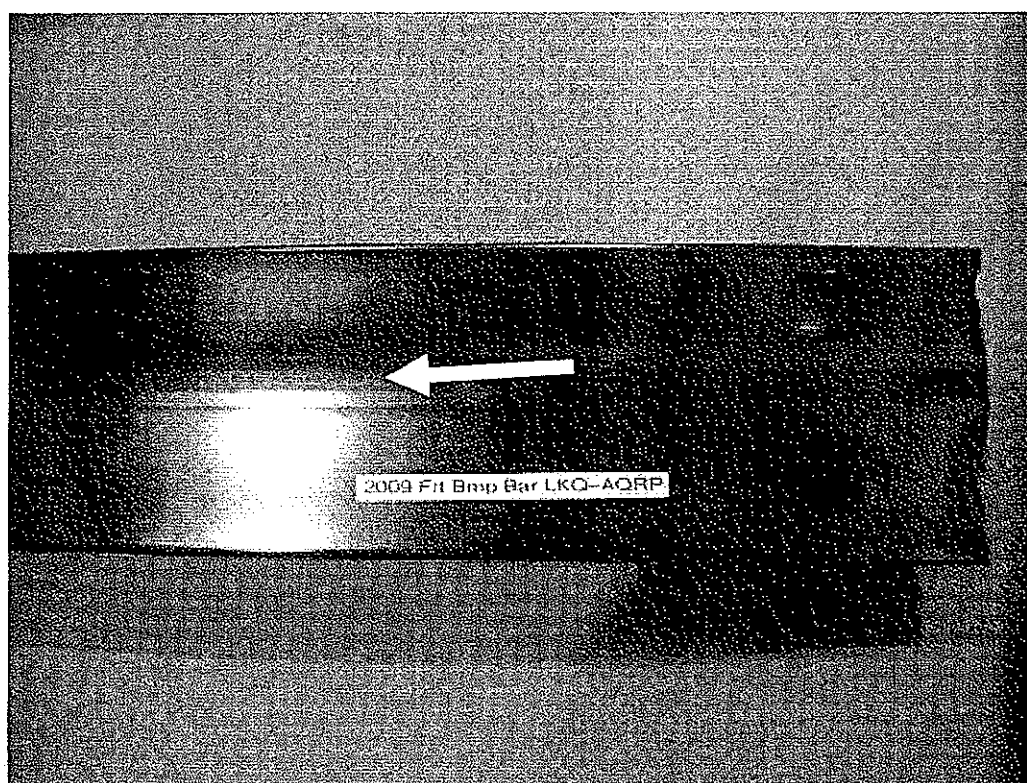
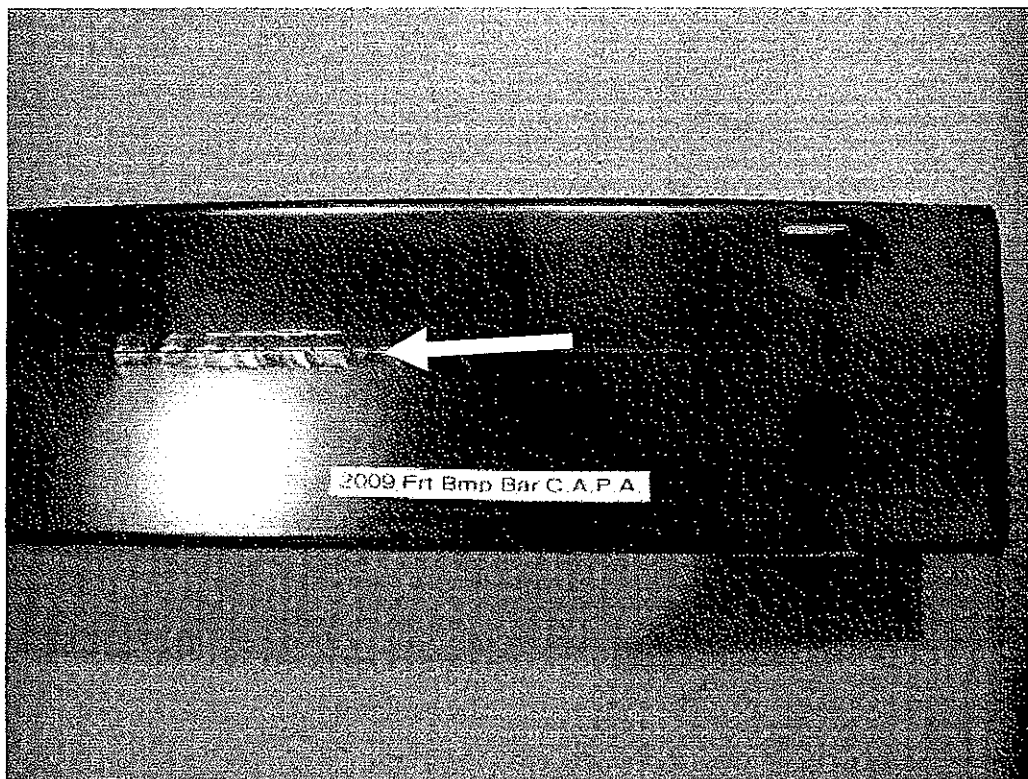
LEAST EXP. PART

Yes, there IS a difference!



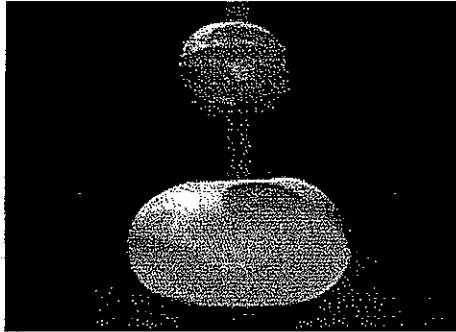






7/100

***COULD BE THE
DIFFERENCE
BETWEEN LIFE
& DEATH***



DURING AN ACCIDENT WHICH "MELON" WOULD YOU RATHER BE?

LIFE or DEATH – ONLY 7/100th OF A SECOND DIFFERENCE

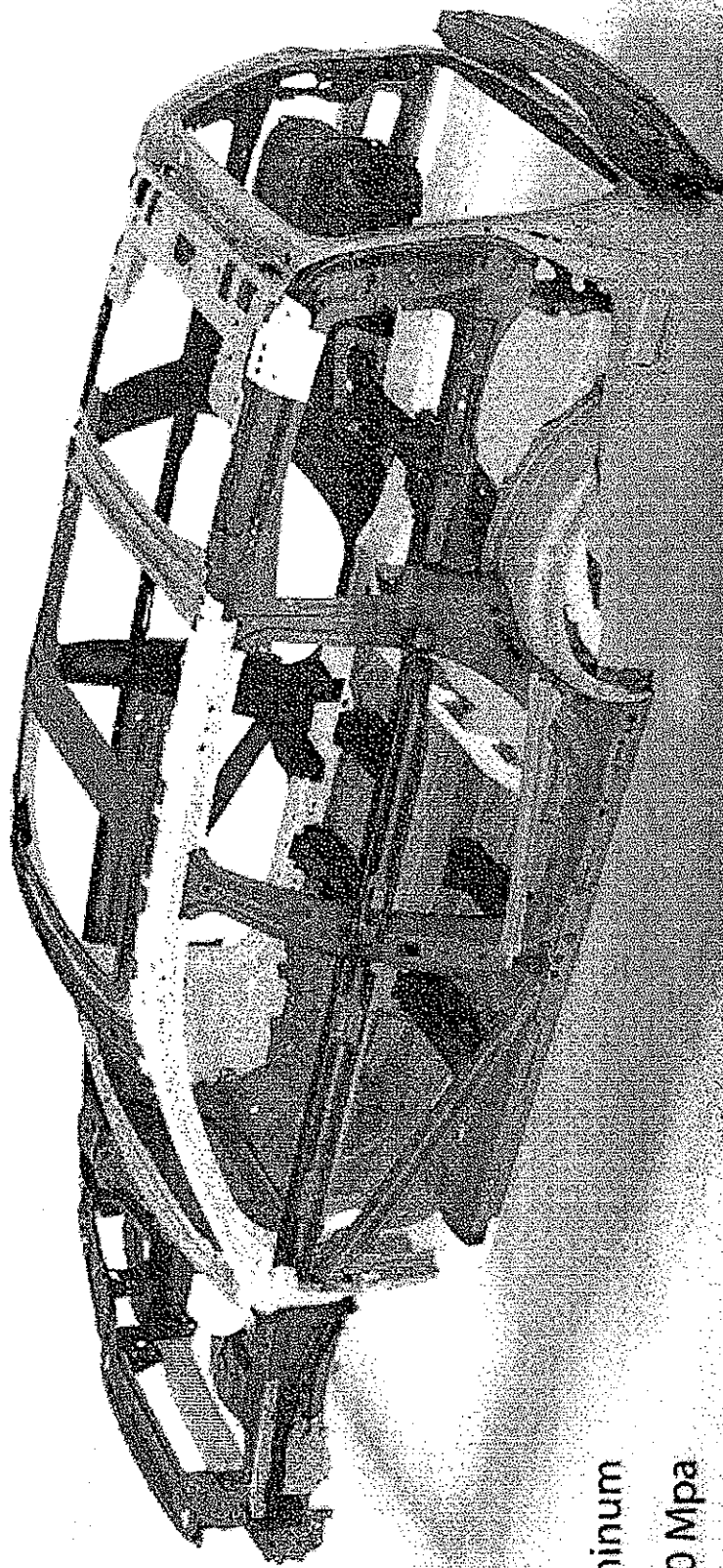
Q: Why is the Secretary of State, Automotive Service Association of Michigan (ASA Michigan), Michigan Automobile Dealer Association and Original Equipment Manufacturer's asking that some automobile parts meet Original Equipment Manufacturer (OEM) standards when redefining "merchantability of parts"?

A: Today's vehicles have MULTIPLE AIRBAGS protecting their occupants. An Airbag that deploys 7/100 or .07 of a second too early or too late could result in a fatality (*the "blink of an eye" is between .10 and .40*). There are parts being sold from offshore suppliers that lack the same quality, construction, design and even testing which pose a threat to consumer safety. The Insurance Institute for Highway Safety (IIHS) also stated *"Some parts, like bumpers, do provide structural strength. Neglecting to build them to the same specifications as original equipment could affect how much damage occurs in a crash or how well occupants are protected. New Institute tests point to the need for these repair parts to be certified as good copies of the originals, so consumers can buy with confidence."* The IIHS is an agency funded by over 100 insurance carriers nationally including AAA, Allstate, Auto Owners, Citizen's, GEICO, Liberty Mutual, Progressive and State Farm, along with the Property and Casualty America Association.

VISIT <http://collision.honda.com/melon-video>

VOTE "YES" TO HB 4344

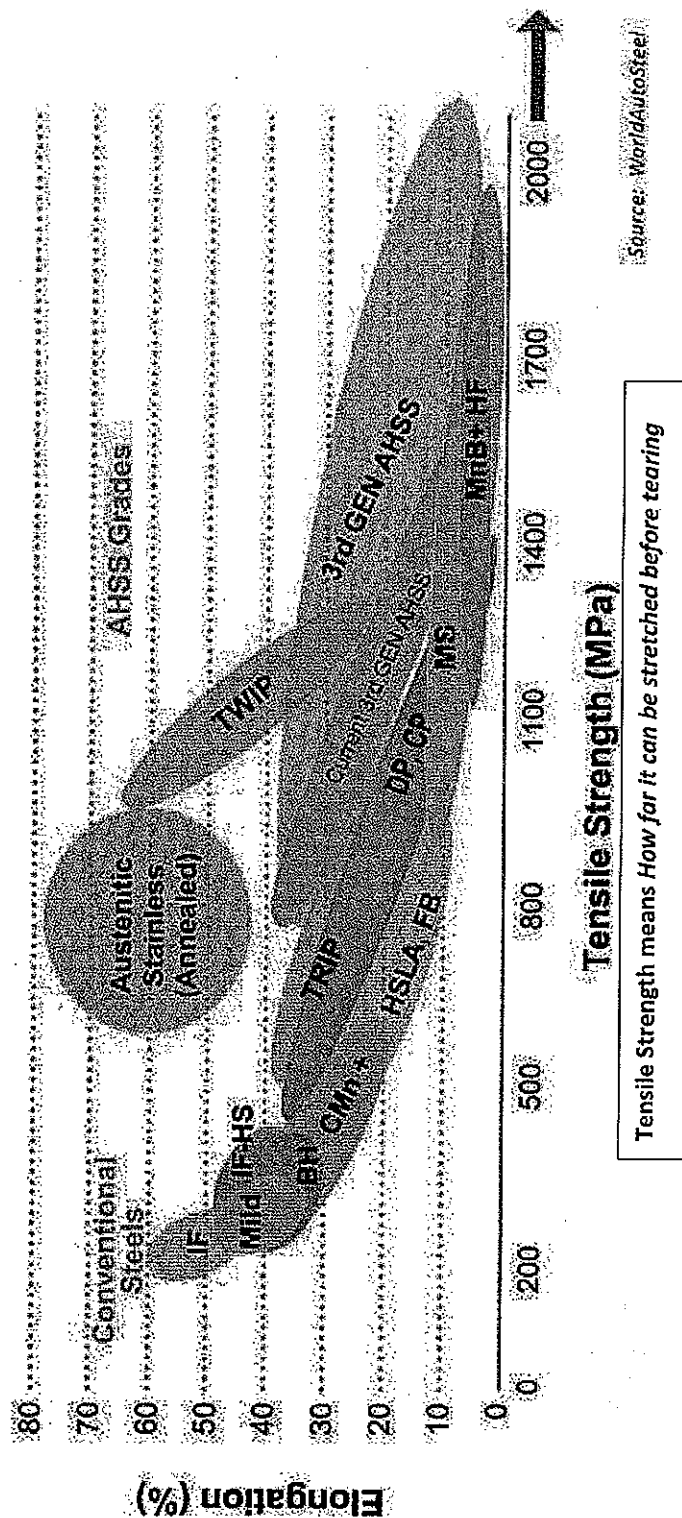
**USING
METALS TO
ACHIEVE
SAFETY WHILE
BEING
LIGHTWEIGHT**



- Aluminum
- < 180 Mpa
- > 180 < 280 Mpa
- > 280 < 380 Mpa
- > 380 < 800 Mpa
- > 800 Mpa

2011 Volvo XC70 AWD L6 - 3.0 Turbo

TYPES OF STEEL



CORPORATE

AVERAGE

FUEL

ECONOMY

STANDARDS

Table 1. NHTSA Estimated⁹ Required Average Fuel Economy (mpg) under the Final Standards – MYs 2017-2021

	MY Baseline	2016	2017	2018	2019	2020	2021
Passenger cars	2010	38.2 –	39.6 –	41.1 –	42.5 –	44.2 –	46.1 –
	2008	38.7	40.1	41.6	43.1	44.8	46.8
Light trucks	2010	28.9 –	29.1 –	29.6 –	30.0 –	30.6 –	32.6 –
	2008	29.2	29.4	30.0	30.6	31.2	33.3
Combined	2010	34.3 –	35.1 –	36.1 –	37.1 –	38.3 –	40.3 –
	2008	34.5	35.4	36.5	37.7	38.9	41.0

Table 2. NHTSA Estimated⁹ Required Average Fuel Economy (mpg) under the Augural Standards – MYs 2022-2025

	MY Baseline	2022	2023	2024	2025
Passenger cars	2010	48.2 –	50.5 –	52.9 –	55.3 –
	2008	49.0	51.2	53.6	56.2
Light trucks	2010	34.2 –	35.8 –	37.5 –	39.3 –
	2008	34.9	36.6	38.5	40.3
Combined	2010	42.3 –	44.3 –	46.5 –	48.7 –
	2008	43.0	45.1	47.4	49.7

Figures 1 and 2 show the actual mpg-footprint target curves for cars and trucks. For passenger cars, the annual increase in the stringency of the standards is expected to average 3.8-3.9 percent from model years 2017 through 2021, and 4.7 percent from model years 2022 through 2025. In recognition of manufacturers' challenges in improving the fuel economy and GHG emissions of full-size trucks because of their unique requirements for higher payload, towing and utility capability, NHTSA is also establishing a slower annual rate of improvement for light trucks overall in the first phase of the program. For light trucks, the proposed annual increase in the stringency of the standards would be 2.5-2.7 percent per year on average in model years 2017 through 2021, and 4.8-4.9 percent from model years 2022 through 2025.¹⁰

⁹ We note that because the standards are footprint-based and the fleet projections and distributions change slightly with each update of our projects, manufacturers' actual compliance obligations for any model year will not be known until the end of that model year based on actual vehicle sales.

¹⁰ NHTSA notes that the presented rates of increase in stringency for CAFE standards are lower than EPA's rates of increase in stringency for GHG standards. As in the MYs 2012-2016 rulemaking, this is for purposes of harmonization and in reflection of several statutory constraints in EPCA/EISA. As a primary example, NHTSA's standards, unlike EPA's, do not reflect the inclusion of air conditioning system refrigerant and leakage improvements, but EPA's standards would allow consideration of such A/C refrigerant improvements which reduce GHGs but generally do not affect fuel economy.

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